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WE CLAIM:

1. A constraining band, comprising:

5 a band, said band having a length and a width and comprising at least one network of fiber having a tenacity of at least about 10 g/d and a tensile modulus of at least about 200 g/d, at least about 50 weight percent of said fiber comprising substantially continuous lengths of fiber along the length of said band, said band being interrupted across the length thereof to create two ends, each of said ends comprising at least one integral loop; and

a pin, said pin connecting the loops of said two ends to one another.

10 2. The constraining band of claim 1 wherein the loops are coaxially aligned for connection.

15 3. The constraining band of claim 1 wherein the pin comprises a rigid material inserted through the loops to close the band, said material being selected from the group consisting of metals; plastics; ceramics; wood; fiber-reinforced composites; and combinations thereof.

20 4. The constraining band of claim 1 wherein the pin comprises a rigid metal inserted through the loops to close the band, said metal being selected from the group consisting of steel, steel alloys, aluminum, aluminum alloys, titanium, and titanium alloys.

25 5. The constraining band of claim 1 wherein the pin comprises a rigid fiber-reinforced composite inserted through the loops to close the band, said reinforcing fiber being selected from the group consisting of aluminum fibers, aluminum alloy fibers, titanium fibers, titanium alloy fibers, steel fibers, steel alloy fibers, ceramic fibers, extended chain polyolefin fibers, aramid fibers, polybenzoxazole fibers; polybenzothiazole fibers; polyvinyl alcohol fibers, polyacrylonitrile fibers, liquid copolyester fibers, polyamide fibers, and mixtures thereof.

30 6. The constraining band of claim 1 wherein the pin comprises a flexible material inserted through the loops to close the band, said flexible material comprising fiber selected from the group consisting of extended chain polyolefin fibers, aramid fibers, polybenzoxazole fibers, polybenzothiazole fibers, polyvinyl

alcohol fibers, polyacrylonitrile fibers, liquid copolyester fibers, polyamide fibers, glass fibers, carbon fibers, and mixtures thereof.

7. The constraining band of claim 1 wherein the pin comprises a flexible material inserted through the loops to close the band, said flexible material being 5 selected from the group consisting of rope; roving; unitape; shield; braid, belt; fabric; and combinations thereof.

8. The constraining band of claim 1 wherein substantially all of the fibrous material in said loops comprises continuous lengths of fiber aligned in parallel and in the hoop direction of said loops.

10 9. The constraining band of claim 1 wherein the network of fibers is in a resin matrix.

10. The constraining band of claim 9 wherein substantially all of the fibrous material in said loops comprises continuous lengths of fiber aligned in parallel and in the hoop direction of said loops.

15 11. The constraining band of claim 10 wherein all of the substantially continuous lengths of fiber in the band are included in the loops of each end.

12. The constraining band of claim 1 wherein the network of fibers comprises fiber selected from the group consisting of extended chain polyolefin fibers, aramid fibers, polybenzoxazole fibers, polybenzothiazole fibers, polyvinyl 20 alcohol fibers, polyacrylonitrile fibers, liquid copolyester fibers, polyamide fibers, glass fibers, carbon fibers, and mixtures thereof.

13. A container assembly, comprising the constraining band of claim 1 in combination with a container, said constraining band encircling the container to make the container blast resistant.

25 14. The container assembly of claim 13 further comprising blast mitigating material located within the container.

15. The container assembly of claim 14 wherein the blast mitigating material comprises an aqueous foam.

30 16. The container assembly of claim 13 further comprising a second band of fibrous material encircling the container to cover the interrupted band where the loops are connected to one another. NA

17. The blast resistant container assembly of claim 13 wherein the container has at least one access opening, and wherein said constraining band encircles the container to cover said access opening.

18. The container assembly of claim 17 further comprising blast mitigating material located within the container.

19. The container assembly of claim 18 wherein the blast mitigating material comprises an aqueous foam.

20. The container assembly of claim 17 further comprising a second band of fibrous material encircling the container to cover the interrupted band where the loops are connected to one another. *MA*

21. The container assembly of claim 17 wherein the loops are coaxially aligned for connection.

22. The container assembly of claim 17 wherein the pin comprises a rigid material inserted through the loops to close the band, said material being selected from the group consisting of metals; plastics; ceramics; wood; fiber-reinforced composites; and combinations thereof.

23. The container assembly of claim 17 wherein the pin comprises a flexible material inserted through the loops to close the band, said flexible material comprising fiber selected from the group consisting of extended chain polyolefin fibers, aramid fibers, polybenzoxazole fibers, polybenzothiazole fibers, polyvinyl alcohol fibers, polyacrylonitrile fibers, liquid copolyester fibers, polyamide fibers, glass fibers, carbon fibers, and mixtures thereof.

24. The container assembly of claim 17 wherein the pin comprises a flexible material inserted through the loops to close the band, said flexible material being selected from the group consisting of rope; roving; unitape; shield; braid; belt; fabric; and combinations thereof.

25. The container assembly of claim 17 wherein substantially all of the ^{fiber} ~~fibrous~~ material in said loops comprises continuous lengths of fiber aligned in parallel and in the hoop direction of said loops.

26. The container assembly of claim 17 wherein the network of fibers is in a resin matrix.

27. The container assembly of claim 26 wherein a portion of said band encircling the container is integral with the container.

28. The container assembly of claim 27 wherein substantially all of the fibrous material in said loops comprises continuous lengths of fiber aligned in parallel and in the hoop direction of said loops.

29. The container assembly of claim 28 wherein all of the substantially continuous lengths of fiber in the band are included in the loops of each end.

30. The container assembly of claim 26 wherein the band is interrupted adjacent to said access opening.

31. A barrier unit comprising a surface, said surface having a regular polygonal perimeter with a plurality of substantially parallel sides, each of said parallel sides terminating in at least one loop integral with the surface, said surface comprising at least one network of fiber having a tenacity of at least about 10 g/d and a tensile modulus of at least about 200 g/d, at least about 50 weight percent of said fiber comprising substantially continuous lengths of fiber aligned in the hoop direction of said loops.

32. The barrier unit of claim 31 wherein the network of fiber comprises fiber selected from the group consisting of extended chain polyolefin fibers, aramid fibers, polybenzoxazole fibers, polybenzothiazole fibers, polyvinyl alcohol fibers, polyacrylonitrile fibers, liquid copolyester fibers, polyamide fibers, glass fibers, carbon fibers, and mixtures thereof.

33. The barrier unit of claim 31 wherein the network of fiber is in a resin matrix.

34. The barrier unit of claim 31 in combination with a second barrier unit, said second barrier unit comprising at least one side terminating in an integral loop that is coaxially aligned with and connected via a pin to one of the integral loops of the first barrier unit.

35. The barrier unit of claim 31 wherein said regular polygonal surface is rectangular.

36. The barrier unit of claim 31 wherein substantially all of the fibrous material in said loops comprises continuous lengths of fiber aligned in parallel and in the hoop direction of said loops.

37. The barrier unit of claim 31 wherein the network of fibers comprises 5 fiber selected from the group consisting of extended chain polyolefin fibers, aramid fibers, polybenzoxazole fibers, polybenzothiazole fibers, polyvinyl alcohol fibers, polyacrylonitrile fibers, liquid copolyester fibers, polyamide fibers, glass fibers, carbon fibers, and mixtures thereof.

38. The barrier unit of claim 31 wherein said regular polygonal surface is a 10 rectangle having two sets of substantially parallel sides, each of said sides terminating in a plurality of spaced coaxial loops integral with the surface, and wherein the network of fibers comprises extended chain polyethylene fibers in a polymeric matrix

39. A blast resistant container assembly, comprising:
15 a. a cover, said cover comprising a polygonal perimeter having first and second substantially parallel sides, each of said parallel sides terminating in at least one integral loop, said cover comprising at least one network of fiber having a tenacity of at least about 10 g/d and a tensile modulus of at least about 200 g/d, at least about 50 weight percent of said fiber comprising substantially continuous lengths of fiber that are substantially perpendicular to said first and second sides and aligned in the hoop direction of said loops;

20 b. a container, said container comprising a wall and an access opening in said wall, said wall comprising at least two integral loops on opposing first and second sides of said access opening;

25 c. means for connecting the loop on the first side of said cover with the loop on the first side of said access opening; and

d. means for connecting the loop on the second side of said cover with the loop on the second side of said access opening, with said cover overlaying said access opening.

40. The container assembly of claim 39 wherein the loops on the first side of the cover and the first side of the access opening are coaxial with one another for connection.

41. The container assembly of claim 39 wherein the loops on the second side of the cover and the second side of the access opening are in register with one another for connection.

42. The container assembly of claim 39 wherein substantially all of the fibrous material in said loops comprises continuous lengths of fiber aligned in parallel and in the hoop direction of said loops.

43. The container assembly of claim 39 wherein said perimeter forms a regular polygon.

44. The container assembly of claim 39 further comprising blast mitigating material located within the container.

45. The container assembly of claim 44 wherein the blast mitigating material comprises an aqueous foam.

46. The container assembly of claim 43 wherein said perimeter forms a rectangle.

47. The container assembly of claim 43 wherein the third and fourth sides of the rectangular cover each terminate in at least one loop, wherein said wall further comprises at least an additional two integral loops on opposing third and fourth sides of said access opening, and wherein means are provided for connecting the loop on the third side of said cover with the loop on the third side of said access opening and for connecting the loop on the fourth side of said cover with the loop on the fourth side of said access opening.

48. The container assembly of claim 39 wherein the connecting means each comprises a pin, said pin comprising a rigid material inserted through the loops for connection.

49. The container assembly of claim 48 wherein the rigid material is a fiber-reinforced composite.

50. The container assembly of claim 39 wherein the connecting means each comprises a pin, said pin comprising a flexible material inserted through the loops for connection.

51. In a hinge comprising a pair of hinge halves terminating in coaxially aligned knuckles for connection with one another, the improvement comprising: a pin comprising a flexible material selected from the group consisting of rope; roving; unitape; shield; braid; belt; fabric; and combinations thereof.

52. In a container assembly comprising a container having a wall and an access opening in said wall, the improvement comprising: a hinge formed of fibrous material, said hinge comprising a pair of hinge halves terminating in spaced, coaxially aligned knuckles which are joined together by a pin to cover the access opening, a portion of said hinge halves being integral with and covering a portion of the container wall.